



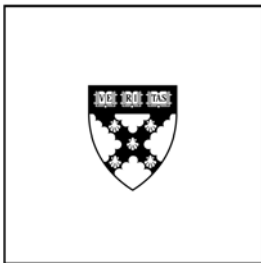
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Dangerous Expectations: Breaking Rules to Resolve Cognitive Dissonance

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Dangerous Expectations: Breaking Rules to Resolve Cognitive Dissonance

**Celia Moore
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DANGEROUS EXPECTATIONS:
BREAKING RULES TO RESOLVE COGNITIVE DISSONANCE

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DANGEROUS EXPECTATIONS:
BREAKING RULES TO RESOLVE COGNITIVE DISSONANCE

Abstract

When entering task performance contexts we generally have expectations about both the task and how well we will perform on it. When those expectations go unmet, we experience psychological discomfort (cognitive dissonance), which we are then motivated to resolve. Prior research on expectancy disconfirmation in task performance contexts has focused on the dysfunctional consequences of disconfirming low performance expectations (i.e., stereotype threat). In this paper we focus on the dysfunctional consequences of disconfirming high performance expectations. In three studies, we find that individuals are more likely to break rules if they have been led to expect that achieving high levels of performance will be easy rather than difficult, even if breaking rules means behaving unethically. We show that this willingness to break rules is not due to differences in legitimate performance as a function of how easy people expect the task to be, or whether their expectations are set explicitly (by referring to others' performance) or implicitly (as implied by their own prior performance). Instead, using a misattribution paradigm, we show that cognitive dissonance triggered by unmet expectations drives our effects.

Words: 181

Keywords: Rule breaking; Unethical Behavior; Expectancy Disconfirmation; Cognitive Dissonance; Misattribution

In the fall of 2012, Harvard University revealed that about 125 students who had taken an undergraduate course in government during the spring semester were being investigated for breaking academic rules during their take-home final exam (Pérez-Peña & Bidgood, 2012). Consistent with Harvard's broader undergraduate regulations, the syllabus for the class—Introduction to Congress—specifically stated the “collaboration of any sort on any work submitted for formal evaluation is not permitted”.¹ However, when grading the final exams, similarities across submissions led to an extensive investigation revealing widespread cooperation and answer sharing amongst a broad proportion of the students, resulting in more than 60 students being required to withdraw from the university for at least two semesters for contravening the institution's exam-taking regulations (Harvard Magazine, 2013).

The events that unfolded at Harvard are far from rare. More than two thirds of college students report that they participated in some type of academic misconduct during the prior year (McCabe, Butterfield, & Treviño, 2012). Some cheat to gain an undeserved advantage over their peers: 84% of students in a U.S. News and World Report survey indicated feeling that they need to cheat in order to get ahead (Kleiner & Lord, 1999). Others cheat to get by without putting in the effort: in one survey of 200 students, 35% of student cheaters claimed they did so because they had too little time to study (Baird, 1980). However, firsthand accounts of those implicated in the Harvard scandal suggest an additional motivation for breaking the rules in this particular exam: the course had failed to meet their expectations that it would be easy to do well in it.

Introduction to Congress was known as a “bird course”, an “easy A”. The “Q guide”, Harvard's online tool that collates faculty ratings and student evaluations of course difficulty, reported that 57% of students in 2010 and 67% of students in 2011 rated the class as “easy” or

¹<http://isites.harvard.edu/fs/docs/icb.topic1179367.files/Intro%20Congress%20Syllabus%202013%20DCE.pdf>

“very easy” (Hackett & Robbins, 2012). The expectation that the course would be easy was reinforced by the professor, who allegedly told students in the 2012 spring term that he “gave out 120+ A’s last year” (Halperin, 2012). However—after, apparently, the professor received pressure from administrators to increase the course’s level of difficulty (Pérez-Peña, 2013)—the final exam was much more difficult than it had been in previous years, resulting in the “Q guide” reporting that only 16% of students rated the 2012 iteration of the course as “easy” or “very easy”, and that students expressed “frustration or dismay at the unexpected difficulty and changed expectations of the spring 2012 version of the course” (Hackett & Robbins, 2012).

Being confronted with unmet expectations is a universally dissatisfying experience. For example, consumers are less satisfied with products that fail to meet their expectations (Oliver, 1977; Olson & Dover, 1979), and investors penalize corporations that fail to meet earnings expectations (Bartov, Givoly, & Hayn, 2002). It feels better and more psychologically coherent to have our expectations met, even if those expectations are negative. As research on stereotype threat has shown, people will perform worse on tasks than their ability allows in order to be more consistent with the expectations set for their performance (Aronson & Carlsmith, 1962; Steele & Aronson, 1995). Introduction to Congress’ bait and switch, where students entered the course expecting an “easy A” and ended up in a course that was more challenging than expected, may have caused similar feelings of unmet expectations. These feelings may have subsequently encouraged students to engage in counterproductive behavior in pursuit of the performance level they had expected to achieve without much effort. In this paper, we propose that when individuals’ expectations that a task will be easy are not met, the dissonance that ensues from this discrepancy leads them to break rules in order to achieve the level of performance that they had anticipated.

Resolving Cognitive Discrepancies Between Expectations and Reality

When we enter a situation expecting one outcome and experience an unpredicted result, we are faced with a cognitive discrepancy between our expectation (a belief about the future) and the reality we are faced with (our experience of that reality). This type of discrepancy can cause an uncomfortable psychological state known as cognitive dissonance (Cooper, 2007; Festinger, 1957). Individuals are motivated to resolve the discrepancy that triggers the dissonance, either by changing one's cognitions or changing one's behaviors (Festinger, 1957).

One of the first and most seminal studies of dissonance involved exactly this type of cognitive discrepancy. In the 1950s, Leon Festinger saw a news article about a group of individuals dubbed The Seekers, who believed that the world would end on December 21st, 1955. One of Festinger's doctoral students, Stanley Schachter, infiltrated the group, to see what would happen when their fervent expectation that world would end failed to transpire (Festinger, Riecken, & Schachter, 1956). When the members of this group were confronted with sunrise of December 22nd, 1955, the discrepancy between their expectations of apocalypse and their experience of the next morning's sunrise led them to reinterpret their beliefs so that they would be consistent with their original expectations. More specifically, they subsequently decided that their premonition that the world would end in fact *caused* the earth to be spared. Festinger interpreted this revisionism as evidence of how individuals are motivated to ensure that their experience of a situation is cognitively consistent with their expectations for it.

Since it is easier to change one's attitudes than change one's behaviors, the tacit assumption in dissonance research has been that the primary route to reducing the discomfort associated with dissonance will be attitude change rather than behavior change (Cooper, 2007). However, in studies using paradigms designed to highlight an individual's hypocrisy about a

specific prosocial behavior (Stone & Fernandez, 2008), dissonance has also been used to promote (prosocial) behavioral rather than attitudinal change. Paradigms highlighting personal hypocrisy have been successfully used to encourage safer sex practices (Stone, Aronson, Crain, Winslow, & Fried, 1994), to increase electricity conservation (Kantola, Syme, & Campbell, 1984), water conservation (Dickerson, Thibodeau, Aronson, & Miller, 1992), and safer driving (Fointiat, 2004).

According to Aronson's revision to dissonance theory (Aronson, 1999; Aronson & Carlsmith, 1962), hypocrisy paradigms are effective in part because highlighting failures to behave in ways consistent with one's own personal standards for prosocial behavior represents a threat to an individual's core beliefs about one's honesty and integrity. Given that honesty and integrity are fundamental to an individual's core beliefs about the self (Epstein, 1973; Stone et al., 1994), this type of threat can be a powerful motivator of behavior change (Stone, Wiegand, Cooper, & Aronson, 1997). As such, it makes sense that when a failure to live up to one's standards for integrity or ethical behavior is made salient, the human drive for consistency will motivate more ethical or prosocial behavior.

However, the importance of maintaining self-integrity includes more domains than one's ethicality. Competence is also fundamental to individuals' core self-beliefs (Deci & Ryan, 1985; Harter, 1978; Vignoles, Regalia, Manzi, Gollidge, & Scabini, 2006; White, 1959), and the behavioral consequences of making salient a failure to live up to one's expectations of competence may be different than the behavioral consequences of making salient a failure to live up to one's standards of morality.

Cognitive Dissonance in Performance Domains

Situations that highlight inconsistencies between one's belief in one's own competence (attitude) and one's demonstrations of that competence (behavior) will likely trigger dissonance in the same way as situations that highlight inconsistencies between one's belief in one's own integrity and one's demonstrations of that integrity. For example, imagine you are a Harvard student taking an Introduction to Government course with a reputation for being an easy "A", and then encounter a challenging take-home final exam which you know you cannot complete independently and do well. This situation does not trigger hypocrisy—an inconsistency between one's standards of morally upright behavior and one's actions. It *does* highlight an uncomfortable inconsistency between how easy one expected it to be to demonstrate one's competence and one's beliefs that they will perform to those standards.

From a cognitive dissonance perspective, an individual in this situation has a choice between changing one's attitudes ("I guess it is harder to demonstrate competence in this course than I thought. I had better revise my grade expectations") and changing one's behaviors (engaging in behaviors that will increase one's grades). Similar to dissonance-eliciting contexts involving integrity, the importance of competence to the self-concept suggests that behavioral rather than attitudinal change may be a likely means of resolving this type of dissonance. The few studies that have focused on dissonance in task performance contexts suggest so as well.

Aronson and Carlsmith (1962) were the first to test the effects of dissonance as a result of manipulating expectations about anticipated performance. Specifically, they manipulated how well individuals expected to do on a test that was ostensibly diagnostic of "social sensitivity" by informing them that they had performed well (poorly) on four trial rounds of a task and then, on the fifth round of the task, manipulating whether their performance was consistent or inconsistent

with their prior high (low) performance. Given the opportunity to change their answers on the final round, participants whose expectations had been disconfirmed—either by performing better or worse than expected—changed their responses significantly more often than those whose expectations were confirmed. The authors concluded that the high rate of answer-changing in the disconfirmation conditions suggested that individuals found having their expectancies disconfirmed to be aversive (cognitively dissonant) (Aronson & Carlsmith, 1962). In fact, this paper motivated them to revise cognitive dissonance theory to increase its focus on self-consistency (Aronson, 1999).

The primary condition of interest for Aronson and Carlsmith (1962) was the one in which participants' *negative* performance expectancies were disconfirmed. When people did better in the final round than they expected, they significantly changed their answers so that their performance was more consistent with their prior low levels. Their findings inspired research on stereotype threat, which finds that minority students, reminded of the low performance expectancies others have for them, would perform at levels consistent with those low expectations (Steele, 1999; Steele & Aronson, 1995).

Of course, in Aronson and Carlsmith's (1962) study, individuals who expected to do well and instead did poorly also strove to meet those higher performance expectancies, in their case by changing their answers in the final round. A series of later studies replicated this finding, corroborating the idea that performing worse than expected is clearly an aversive experience that individuals address through behavioral change (attempting to achieve higher levels of performance) as opposed to attitude change (accepting lower levels of performance) (Ward & Sandvold, 1963; Waterman & Ford, 1965; Zegers, 1968).

However, the outcome in both Aronson and Carlsmith's original study and the replication studies—the number of changed answers—was explicitly permitted by the experimenters as part of the procedure. Participants were told in the final round, “Would you mind terribly if I asked you to take the fifth section again? Why don't you just pretend it's a completely new set of pictures; i.e. respond as if you've never seen the pictures before” (1962, p. 180). Given this permission, it is reasonable that individuals who expect to perform well but discover they have performed badly will change their answers during this “redo” round. But what if these participants hadn't been given permission to change their answers? What if, left alone in the room, they spy an eraser? How many then would change their answers to match their high performance expectancies?

We argue that when one experiences dissonance as a result of an inconsistency between high performance expectancies and low actual performance, one will change one's behavior to meet their performance expectations rather than change their beliefs about how easy it would be to perform well. This behavioral reaction will go beyond what is ethically permissible in the context. We contend that the absence of legitimate routes to performance improvement will not deter the drive to meet the individual's performance expectancy. Like the students in Harvard's Introduction to Congress class, we expect individuals to break rules to meet their performance expectations rather than change their beliefs about how easy it would be to demonstrate their competence.

Resolving Dissonance Through Rule Breaking

The idea that finding oneself in a situation where performing at a high level is harder than expected may lead to rule breaking is supported by recent work on organizational misconduct. High levels of firm past performance have been found to lead to *more* rather than less

organizational misconduct and corporate illegality (Harris & Bromiley, 2007; Mishina, Dykes, Block, & Pollock, 2010). The authors of these studies propose that a history of high performance causes expectations that similarly high levels of performance will persist in the future. If these expectations go unmet (future performance dips), the resulting discomfort with that outcome leads to rule breaking to meet expectations. For example, among S&P 500 manufacturing firms, high-performing firms were more likely than low-performing firms to engage in illegal behavior (Mishina et al., 2010). Similarly, performing above past levels is a significant predictor of later misrepresentations in firms' financial statements (Harris & Bromiley, 2007). Also, firms are more likely to break rules after failing to meet publicly stated earnings expectations than when they do meet them (Hogan, Rezaee, Riley, & Velury, 2008).

Taking this argument down to the individual level, we propose that when people *expect* to perform extremely well—regardless of the source of that expectation—their failure to do so will trigger dissonance. Due to the importance of competence to the self-concept, in an effort to resolve this dissonance, we expect individuals to break rules to meet their expectation rather than to change their beliefs about how well they will perform (which would require changes to their beliefs about their competence).

Overview of Studies

We tested our predictions in three experiments. Study 1 tests the main effect of unmet expectations on rule breaking. Study 2 uses a different manipulation of expectations, to ensure that our effect is not limited to individuals' concerns that they should meet externally set expectations. Finally, Study 3 uses a misattribution manipulation (Fried & Aronson, 1995) to test the mechanism we propose: that our effects are driven by cognitive dissonance triggered by the

discrepancy between how easy it would be to achieve high levels of performance, and how difficult it turned out to be.

Study 1

Study 1 provided an initial assessment of whether participants' expectations about how easy a task would be would affect the extent to which they would break rules in order to meet them using a behavioral measure of rule breaking.

Method

Participants: Fifty-six participants ($M_{\text{age}}=28.0$, $SD=9.94$, 28% male) were solicited as they were exiting a behavioral lab in the U.K.²

Task and procedure. The experimenter approached participants and asked if they would like to play a short game for the chance to win a chocolate bar. After signing a consent form, participants followed the experimenter to the “game room”, which had a bucket at one end of the room, and a line marked with tape approximately 10 feet away from the bucket. The experimenter then said:

As you can see, we have a bucket at one end and a line that has been marked with tape at the other end. We would like you to take this ball [participant is shown a small foam ball], stand behind the tape line, and throw the ball into the bin. The ball may bounce on the floor or against the far wall, but in order for the throw to count it must end up in the bin.

To demonstrate, the experimenter mimed the task by standing behind the line and walking the ball down the room and pretending to throw it into the bin. The experimenter did not throw the ball or provide any additional instructions. To manipulate how easy or difficult the participant expected the task to be, the experimenter then said:

² The demographics reported here are from the 90 participants that we solicited as they exited another study. As we wanted to be as unobtrusive as possible in collecting these data, the experimenter did not ask the participants their age or note their sex a second time. As a result, there might be slight differences in the mean age or gender breakdown between this sample and our smaller sample.

*After I leave the room, I would like you to throw the ball three times try to get the ball in at least twice. You only have three trials. On average, [set easy expectations: “8 out of 10 participants”] [set hard expectations: “2 out of 10 participants”] have managed to get two out of three throws in the bucket. I’ll leave the room so my presence does not produce any additional pressure on you. But when you are done, and because we cannot hear you from outside the room, can you please come back to the room where you signed the consent form and report how you did. If you managed to get two out of your three throws in the bin, you will win a chocolate bar.*³

Unbeknownst to the participant, a laptop computer with a live camera feed allowed a second experimenter sitting in a separate room to record how many throws each participant took. Our dependent variable was how many throws a participant attempted in an effort to win the game. When the participant returned to the experimenter, he asked if they had won the game. The experimenter thanked and debriefed the participants, and gave them the chocolate bar if they had succeeded in the task.

Results and Discussion

Whether the participants believed that winning the game would be easy or hard had no effect on whether they succeeded in getting two throws in the bucket: 6 of the 28 participants in the condition where they expected it would be easy, and 8 of the 28 participants in the condition where they expected it would be hard succeeded in throwing the ball in the bucket twice, $\chi^2(1, N = 56) = 0.38, p = .54$. This result remains the same even controlling for the number of throws attempted. In a logistic regression predicting success at the task, the experimental condition remained non-significant ($B = -.07, p = .92$) even after controlling for the number of throws taken ($B = -18.68, p = .99$). However, there were differences in terms of which participants took more throws than the rules permitted: when expecting the game would be easy, 6 of the 28 participants

³ We chose to manipulate expectations in this way as it is common to manipulate high and low expectancies in psychological research using 80% as a high level and 20% as a low level of an experimental factor (e.g., Brockner, 1979; Mirman, McClelland, Holt, & Magnuson, 2008; Weary, Hill, & Jordan, 1984).

took more than the number of permitted throws, where none of the 28 participants did the same when they expected the task to be hard, $\chi^2(1, N = 56) = 6.72, p = .01$. Participants who expected it to be easy to win the game took, on average, half an extra turn than the rules permitted, $M_{\text{easy}}=3.36, SD=0.78$ vs. $M_{\text{hard}}=3.00, SD=.00, t(27)=2.42, p=.022$ (see Figure 1).⁴

-----INSERT FIGURE 1 ABOUT HERE-----

Study 2

Study 1 provided initial evidence that when individuals enter situations where a task they expected to be easy turns out to be challenging, they are more likely to break the rules to achieve their anticipated high level of performance. In this first study, participants' expectations were set externally by referencing supposed average chances of success from other participants' prior efforts. In Study 2, we manipulate expectations without referencing a social norm to create those expectations, use a different rule-breaking paradigm that requires less conscious intent, and rule out negative affect as the primary driver of our results.

Method

Participants: We recruited 195 U.S.-based participants on Amazon MTurk ($M_{\text{age}}=34.9, SD=11.84, 50\%$ male), who participated in the study in exchange for a \$1.50 payment.

Task and procedure. The study was conducted in a 2 (easy vs. hard set expectations) X 2 (answers visible vs. no answers visible) design. In this study, we manipulated participants' expectations by starting the experiment with either a very easy or a very difficult task. In the same way that a reputation for an "easy A" course would develop with easy, rather than difficult, first assignments, in this experiment participants were randomly assigned either to a condition that asked 20 easy personal questions ("What is your favorite color?" "What is your favorite

⁴ The degrees of freedom and significance levels have been adjusted to account for a significant Levene's test.

sport?") or to a condition that asked a series of 20 trivia questions pretested in prior research (Moore & Healy, 2008) to be very difficult to answer correctly ("What is South America's highest mountain?" "Who is credited with inventing the wristwatch in 1904?").

Participants were then asked to complete a series of trivia questions pretested to be moderately difficult ("What is the name of the world's largest coral reef, located off the coast of Australia?") and randomly assigned either to a condition in which the answers were visible at the bottom of the screen (in the corner, in small font) or a condition where no answers were displayed (cf., Chance, Norton, Gino, & Ariely, 2011). Participants who were able to see answers were instructed explicitly to answer the question prior to looking at the bottom of the page: *"You will now complete a round of trivia questions. Please answer the question first, but in this task you can check your answers while you work by looking the bottom of the page."*

Responding to the question after looking at the answers was therefore possible but contrary to the instructions the participants had been given. By displaying the answers for half of the participants, we could determine the extent to which setting expectations that the task would be easy triggers a higher likelihood of contravening the instructions given for the task by looking at the answers in advance of responding. Including a condition with no answers at the bottom of the page also helps confirm for a second time that differing expectations of task difficulty are unrelated to how well participants legitimately perform on the task (as we found in Study 1). Finally, we assessed participants' moods at the end of the experiment using the Positive and Negative Affectivity Schedule (PANAS; Watson, Clark, & Tellegen, 1988): 10 items to assess positive affect ($\alpha=.92$) and 10 items to assess negative affect ($\alpha=.93$).

Pilot study. To verify that our manipulation of expectations was effective, we conducted a pilot test. We recruited a separate MTurk sample of 67 participants ($M_{\text{age}} = 34.9$, $SD = 11.95$;

40% male) for a payment of \$1.00. We told participants that the study included two rounds of a task and then had them complete the first round of the task (answering either the personal questions [easy expectations] or the hard trivia [hard expectations]). Then we asked them how easy they expected the second task to be, how challenging they expected it to be, and how well they expected to do on the second task (all on 7-point scales)—measures that we combined into a composite measure of expectations after reverse-scoring the relevant item ($\alpha=.84$). We also told participants that the second round of the task contained 20 questions, and we asked them to estimate what percentage of those questions they would answer correctly (from 0% to 100% in 10% point increments). Although they had been given no information about the second round of the task, other than that it contained 20 questions, participants who completed the personal questions believed the next round of the task would be significantly easier ($M_{\text{easy}}=5.05$, $SD=1.06$, vs. $M_{\text{hard}}=2.78$, $SD=1.00$, $t(65)=8.97$, $p=.000$) and that they would do better on it ($M_{\text{easy}}=69\%$, $SD=22\%$, vs. $M_{\text{hard}}=31\%$, $SD=28\%$, $t(65)=6.22$, $p=.000$) than did those who had completed the difficult trivia questions. These results suggest that our manipulation effectively set individuals' expectations of the upcoming task to be either easy or hard.

Results and Discussion

If the extent to which participants contravene the instructions for the task differs depending on whether their expectations for the task had been set as easy or hard, this would provide further evidence that expecting a task to be easy can increase the likelihood of rule breaking. We conducted a 2 (expectation condition: easy vs. hard) X 2 (answers condition: visible vs. control) ANOVA using performance as the dependent variable. There was a main effect for the expectation condition, such that individuals led to expect the task would be easy ($M_{\text{easy}}=13.03$, $SD=4.62$) gave more correct answers on the second round of trivia questions than

those who expected the second round of trivia to be hard ($M_{\text{hard}}=12.19$, $SD=4.78$), $F(1,192)=3.91$, $p=.050$, $\eta^2_p=.020$. However, this effect was driven entirely by differences in performance when people could respond after looking at the correct answer in advance ($M_{\text{easy}}=15.91$, $SD=4.10$ vs. $M_{\text{hard}}=14.25$, $SD=4.54$, $F(1,192)=4.18$, $p=.042$, $\eta^2_p=.02$), even though they were told to commit to their answer before looking at the bottom of the page. When participants were not able to see the answers, Round 2 performance was equal across expectation conditions ($M_{\text{easy}}=10.48$, $SD=3.41$ vs. $M_{\text{hard}}=9.87$, $SD=3.95$, $F(1,192)=.56$, $p=.45$, see Figure 2). Thus, expectations did not affect legitimate performance but did lead to differences in terms of whether the participants contravened the instructions by looking at the answers in advance.

-----INSERT FIGURE 2 ABOUT HERE-----

We also examined the number of seconds it took each participant to answer each question in the second round. There was, predictably, a main effect for condition, such that individuals who could see the answers were able to respond more quickly (spending 11.0 seconds per question, on average) than individuals who could not see the answers (spending 13.7 seconds per question, on average, $F(1,190)=12.43$, $p=.001$, $\eta^2_p=.06$).⁵ However, the decrease in the number of seconds it took to respond to questions when one could see the answers (as compared to when one could not) was larger for those in the easy-expectations condition (from 13.7 seconds per question to 10.1 seconds per question, $F(1,190)=10.31$, $p=.002$, $\eta^2_p=.05$), compared to those in the hard-expectations condition (from 13.8 seconds per question to 11.8 seconds per question, $F(1,190)=3.17$, $p=.076$, $\eta^2_p=.02$). Those who expect a task to be easy are more likely to take the easy way out (by looking at the answers in advance more quickly), even when they have been explicitly asked to refrain from doing so.

⁵The degrees of freedom are different in this analysis because two participants' browsers did capture the time elapsed while responding to questions.

Finally, we assessed whether negative affect influenced rule breaking. Dissatisfaction is a key consequence of expectancy disconfirmation (Anderson, 1973; Oliver, 1980; Weaver & Brickman, 1974); thus, we wanted to address the potential alternative explanation that a negative affective response to having one's expectancy disconfirmed drove looking at the answers in advance. We needed to assess mood after the second round of the task, collecting it in advance would not tap the dissatisfaction associated with the expectancy disconfirmation. There were no differences in either positive ($M_{\text{easy}} = 2.92$, $SD = .94$ vs. $M_{\text{hard}} = 2.80$, $SD = .93$, $t(190) = .83$, $p = .41$) or negative affect as a function of manipulated expectations ($M_{\text{easy}} = 1.28$, $SD = .59$ vs. $M_{\text{hard}} = 1.27$, $SD = .49$, $t(190) = .17$, $p = .87$), suggesting that negative affect as a consequence of having one's expectations unmet was not the primary driver of our rule-breaking effects.

Study 3

Our argument rests on the claim that finding a task to be more difficult than expected triggers an inconsistency between one's belief about how easy a task will be (attitude) and one's actual ability to demonstrate their competence in that task (behavior). This inconsistency represents a state of cognitive dissonance that can be resolved by breaking rules in order to achieve a level of performance they expected to meet easily. It is notoriously difficult to assess cognitive dissonance and its resolution directly (Cooper, 2007). One of the most common ways to test dissonance reduction as a mechanism is to include an additional experimental condition that allows participants to misattribute the uncomfortable feelings of dissonance to an external source (Fried & Aronson, 1995; Zanna & Cooper, 1974). Research that uses this paradigm argues that creating an opportunity for participants to misattribute the source of their physiological discomfort to an external source mitigates their need to behave in a way that would otherwise reduce the dissonance. If dissonance reduction strategies are reduced in the

misattribution condition, then dissonance is considered to be driving the effects in the conditions without the misattribution opportunities.

The first misattribution paradigm used in dissonance research involved ingesting a placebo drug alongside a traditional dissonance-eliciting procedure involving writing an attitude-discrepant essay under conditions of high (dissonance-eliciting) and low (non-dissonance-eliciting) choice (Zanna & Cooper, 1974). The authors predicted and found that attitude change (a dissonance-reduction strategy) was high in the high-choice condition when participants were told the pill had no side effects. The attitude change diminished when participants were told the pill would cause them to feel tense (misattributing their psychological discomfort to the pill), and increased when they were told the pill would cause them to feel relaxed (exacerbating the importance of reducing the uncomfortable feelings of dissonance).

Other misattribution paradigms have created opportunities for subjects to credit the source of the discomfort associated with their dissonance to an overheated room (Fazio, Zanna, & Cooper, 1977), the threat of being shocked in the near future (Pittman, 1975), the disorientation associated with wearing prism goggles (Losch & Cacioppo, 1990), and the potential discomfort of “new lights” (Norton, Monin, Cooper, & Hogg, 2003). Participants in each of these paradigms used dissonance-reduction strategies less often than the participants without similar opportunities to misattribute their dissonance. We conducted Study 3 to provide evidence that setting easy expectations can cause dissonance when the task turns out to be harder than expected, and that this dissonance triggers rule breaking in an effort to achieve a more expectation-consistent level of performance. Our prediction is that rule breaking will be attenuated when the dissonance triggered by the discrepancy between one’s beliefs about how

easy it would be to perform well on a task and how challenging the task actually is can be attributed to an external source.

Method

Participants: One-hundred and sixty-five participants recruited on Amazon MTurk ($M_{age}=34.3$, $SD=12.5$; 49% male) participated in the study in exchange for a \$0.50 payment, and an opportunity to win up to an extra \$3.50 in bonus money, depending on their task performance.

Task and procedure. The study was conducted in a 2 (easy vs. hard set expectations) X 2 (misattribution vs. control) design. Participants read that they were to participate in a test of verbal ability, in which they were instructed they would have to “*find as many four letter words as you can from a letter matrix*” and that “*participants will be presented with one of a few different matrices, with varying degrees of difficulty*”. After consenting to the study, they paged forward to the instructions. This page contained information about how they would earn a \$0.25 bonus for each word they correctly identified, as well as the rules they would have to follow for an identified word to count. Specifically, they read:

“You will only have two minutes to identify the words.

(1) You cannot reuse letters in the matrix.

(2) Only 4 letter words count.

(3) All letters must be connected.

(4) Proper names do not count (e.g. Pacific, Ben, Obama).

Below are examples of correct and incorrect word identifications. Once you have read and understand the rules, click on the arrow to continue.”

Figure 3a reproduces what the participants saw as examples of legitimate and illegitimate words from a representative matrix, before advancing to the final task.

Expectation manipulation. After reading the rules and seeing a matrix with clear examples of legitimate and illegitimate words that could be created from it, but before seeing the matrix that they would be using in the main part of the task, participants navigated forward to a page that read: “You will be seeing a relatively *easy* [*hard*] matrix. Pretesting has determined

that participants *can find quite a few [cannot find very many]* words in this matrix.” We intentionally left interpretations of what “quite a few” or “not very many” words would mean up to the participants, as we did not want participants to anchor their expectations to a specific numeric goal. As a manipulation check, before participants paged forward to the task, they were asked, “How well do you expect to do in this game?” They responded using a 7-point scale ranging from 1=very poorly to 7=very well.

Participants then navigated forward to a page that read, “*Before you start, it is helpful to get out a piece of paper to write down the words you find. We suggest you do so.*” We used this instruction to encourage individuals to write down the words that they found, in order to minimize concerns that their later reporting of their performance was unreflective of their actual performance, as they would have a record of what it was. As the study was conducted online, we had no way of requiring that participants did use paper; however, the participants’ later recall of the words they found in the matrix suggested that they had done so. They then paged forward to the matrix they used in the task. The computer automatically paged forward, away from the matrix, after 120 seconds had elapsed. This matrix is reproduced in Figure 3b.

-----INSERT FIGURE 3a AND 3b ABOUT HERE-----

Misattribution manipulation. On the page immediately following the page with the matrix, we included our misattribution manipulation. Since we ran this experiment online, we asked half of the participants to assess the font used to present them the matrix letters. This page read, “*Research has shown that the presentation and style of the letters may affect outcomes in word games. We are interested to know how the font/script used in the matrix may have affected your ability to answer the questions. How would you rate the following characteristics of the font we used?*” They then assessed the font used in the matrix for its readability, legibility, and

beauty, on a 7-point scale from 1=very bad to 7=very good. Participants who were not given the opportunity to misattribute their dissonance to an external source simply paged forward to the next page of the study.

Self-reported performance. On the next page, participants were given an opportunity to self-report their performance. They were asked, “*How many words did you correctly identify in the matrix?*” and provided with an opportunity to report between 0 and 15 words. On the next page, they were asked, “*How well did your performance meet your expectations?*” and asked to respond using a 5-point scale from 1=I performed well below my expectations to 5=I performed well above my expectations. Then, they were asked to write down all the words they had correctly identified. (Note that participants were restricted from paging backward in the survey.) This request was prefaced with the following instruction: “*People identify different patterns of words. We are interested in which words you found in the matrix. Below, please list all words you correctly identified in the matrix.*” There were fifteen lines in which participants could list the words that they correctly identified.

Rule breaking measure. We used discrepancies between the list of words the participants wrote on this page and the number they originally reported as correctly identifying in the matrix as our measure of rule breaking. Specifically, we counted as rule breaking words that were reported but which clearly broke the rules of the game: words that were more or less than 4 letters (i.e., “slimy”, “bit”), were proper nouns, words that could not be created out of the letters in the matrix (i.e. “wait”, “test”), or were simply not words (i.e., “tiby”, “bils”).

Attention check. Finally, we wanted to ensure that participants could correctly recall the rules of the word game. We asked participants “*How many letters did a word need to be to count?*”, “*How many times could a letter be used in a word?*”, and then asked them to recall any

other requirements a word needed to have before counting. There were no differences by condition in terms of the number of rules individuals recalled, on average, indicating that our manipulations did not affect how participants remembered the rules. However, we wanted to be confident that individuals who had simply forgotten the rules did not contaminate our measure of rule breaking. Thus, in the results reported here we include the 102 participants who answered both the questions correctly (words had to be 4 letters, letters could only be used once), and recalled at least one other rule (all letters had to be adjacent/couldn't skip over letters, no proper nouns). However, we note that all our results remain the same, both in direction and significance levels, when we use the entire sample of 165 participants (results available upon request).

Results and Discussion

Manipulation check. As expected, participants in the easy condition expected to do better in the game ($M=4.43$, $SD=1.08$) than those in the hard condition ($M=3.57$, $SD=1.34$, $t(100)=3.57$, $p=.001$), indicating that our manipulation of expectations was effective. In addition, after the matrix task, participants in the easy condition felt they did worse than they expected ($M=2.14$, $SD=.87$), more so than participants in the hard condition ($M=2.76$, $SD=.99$, $t(100)=3.39$, $p=.001$), indicating that their failure to meet their expectations was felt more strongly in the easy expectations condition than in the hard expectations condition.

Main analysis. Our focal interest was to determine whether the opportunity to misattribute one's dissonance to the legibility of the font would reduce the discomfort associated with performing worse than expected in the word search task, and thus reduce the need for rule breaking in the easy expectations condition. We conducted a 2X2 analysis of variance with expectation condition (easy vs. hard) and misattribution condition (misattribution vs. control) as the two factors, and rule breaking as the dependent variable. There was a main effect for the

expectation condition such that individuals led to expect the word game would be easy reported more words that broke rules ($M_{\text{easy}}=.94$, $SD=1.38$) than those who expected the word game to be hard ($M_{\text{hard}}=.53$, $SD=1.06$), $F(1,98)=4.39$, $p=.039$, $\eta_p^2=.043$. There was also a main effect for the misattribution condition such that individuals who were given the opportunity to misattribute the dissonance caused by their unmet expectations reported fewer words that broke the rules ($M_{\text{misattribute}}=.48$, $SD=1.02$) reported more words that broke rules than those who expected the word game to be hard ($M_{\text{control}}=1.00$, $SD=1.40$), $F(1,98)=6.09$, $p=.015$, $\eta_p^2=.059$.

These main effects were qualified with the predicted interaction between the expectation and misattribution conditions, $F(1,98)=5.80$, $p=.018$, $\eta_p^2=.056$. Participants were most likely to report words which broke the rules in the condition in which they expected the task to be easy and were not given the opportunity to misattribute this dissonance to the font ($M_{\text{control}}=1.59$, $SD=1.76$), compared to when they were given the opportunity to misattribute their dissonance to the font ($M_{\text{misattribute}}=.45$, $SD=.69$), or to those who expected the task to be hard ($M_{\text{control}}=.53$, $SD=.79$; $M_{\text{misattribute}}=.52$, $SD=1.34$, see Figure 4). We note that we find this same interaction, with the same pattern, when we use the entire sample $F(1,161)=6.49$, $p=.012$, $\eta_p^2=.039$.

These results suggest that cognitive dissonance arises when one's attitude (one's expectation about how easy it will be to do well) is inconsistent with one's behavior (how well one is able to demonstrate their competence legitimately). This dissonance can be resolved via rule breaking, to achieve a level of performance that is more aligned to one's expectations, or can be attenuated by offering participants an opportunity to attribute their dissonance to an external source (the font used in the word game).

-----INSERT FIGURE 4 ABOUT HERE-----

General Discussion

In this paper, we proposed that individuals are more likely to break rules if they have been led to expect that achieving high levels of performance will be easy rather than difficult. We argue that this phenomenon occurs because of the heightened cognitive dissonance people experience when their performance expectations go unmet. Consistent with our arguments, across three studies we find that people are more likely to break rules when have been led to believe that performing well will be easy rather than hard. We also show that differences in rule breaking are not due to differences in legitimate performance as a function of how easy people expect the task to be or whether their expectations are set explicitly (by referring to others' performance, Study 1) or implicitly (as implied by their own prior performance, Study 2). Using a misattribution paradigm, we also show that cognitive dissonance triggered by unmet expectations drives our effects (Study 3).

Theoretical contributions. Our research contributes to the literature in various ways. First and foremost, our work contributes to theory underpinning current research in moral psychology and behavioral ethics. Though cognitive dissonance is a process that would appear extremely relevant to unethical behavior (as acting unethically typically contravenes one's self-beliefs as a moral person), and moral implications of cognitive dissonance were proposed early on (Festinger & Freedman, 1964; Mills, 1958), the role that dissonance plays in unethical behavior has only been studied in a fragmented way (for exceptions which have discussed it, see Ayal & Gino, 2011; Shu, Gino, & Bazerman, 2011). Our paper clearly suggests one way in which dissonance can trigger unethical behavior. However, many questions regarding the role of motivated moral reasoning in the reduction of dissonance after an unethical act (Barkan, Ayal, Gino, & Ariely, 2012; Ditto, Pizarro, & Tannenbaum, 2009), how post-decisional dissonance can

be reduced behaviorally (Lee & Schwarz, 2010), or how dissonance might trigger moral development as well as moral violations (Rholes, Bailey, & McMillan, 1982) remain open. As a field, we have only scratched the surface in terms of the role that cognitive dissonance plays in unethical behavior.

Another way in which this work contributes to the field of behavioral ethics is in terms of the self-concept. The dominant perspective advanced in the behavioral ethics literature is that our self-concept functions to curb unethical behavior (Mazar, Amir, & Ariely, 2008; Shalvi, Dana, Handgraaf, & De Dreu, 2011; Shalvi, Handgraaf, & De Dreu, 2011). For example, Mazar, Amir, and Ariely (2008) argue that people cheat only to the extent that they can reasonably justify their actions and maintain a positive self-concept as a moral person. However, most of the empirical work supporting this view uses paradigms that allow people to justify small unethical acts while maintaining their self-image as moral individuals. Our argument and evidence suggest that if people experience a situation in which different aspect of their self-concept is activated (their competent selves), their drive to meet their own performance expectancies may lead them to break rules in order to achieve their expected performance levels (demonstrate their desired level of competence), even if it means lying or cheating. Our need to maintain a positive self-concept is multivalent; it requires both competence and morality (Rosenberg, Nelson, & Vivekananthan, 1968; Steele, 1988). In contexts where the competent self is paramount, it appears that breaking the rules in order to achieve expected levels of performance is an attractive option.

Second, our work contributes to research on the negative consequences of goal setting. Previous work has found that the drive to meet specific, difficult goals can motivate unethical behavior. That is, when individuals fail to meet specific performance targets, they are more likely to cheat or lie in order to create the perception that they met those targets (Schweitzer,

Ordóñez, & Douma, 2004). Our work suggests that it is not just specific goals that may drive rule breaking and unethical behavior. Rather, even general expectations implied by setting those goals (i.e. vague understandings of “high” levels of performance) can drive rule breaking behavior. In other words, expectations represent a broader category than goals about which we should worry. Even if a specific goal in a situation were eliminated—removing the precise performance target onto which individuals become anchored and do whatever it takes to meet (Ordóñez, Schweitzer, Galinsky, & Bazerman, 2009)—the ambiguous expectations one enters a situation with can still drive dysfunctional behavioral responses.

Third, our work adds to the conversation about how important it is for people to restore their self-concept after it has been threatened. For instance, in the context of morality, Jordan and Monin (2008) found that when people experience a threat to their self-worth, they condemn those who are responsible for the threat and give themselves “extra” moral credit, rating themselves as more moral and rating others as less moral. As this research demonstrates, threats to a dimension of the self-concept trigger behavioral reactions to restore one’s self-concept in the domain that has been threatened. Here, we extend this body of work by showing that expectancy disconfirmation in task performance contexts may serve as a potential threat to one’s sense of competence and increase rule breaking, allowing individuals to demonstrate (even if illegitimately) that sense of competence.

Fourth, our research also speaks to existing work on self-deception. Research finds that when individuals cheat to reach higher levels of performance and increased rewards, they do not take into account the fact that cheating led them to perform well when predicting their performance on future tasks (Chance et al., 2011). The present studies complement this research by focusing on how people whose expectations of high performance are disconfirmed use rule

breaking to reduce or eliminate the dissonance they experienced when confronted with worse than expected performance. Rule breaking in this context appears preferable to accepting an unexpectedly low level of performance. If situational factors are present that facilitate justifications to render the rule breaking more morally innocuous (Shalvi, Dana, et al., 2011), our effects may be exacerbated. The reporting on Harvard's cheating scandal certainly suggests that the number of available justifications for contravening the exam policies—overly helpful teaching fellows, collaborating with other students in the open without any immediate consequences—played a role in facilitating the students' prohibited activities (Halperin, 2012; Pérez-Peña & Bidgood, 2012).

Finally, our work contributes to research on the use of cognitive dissonance to motivate behavior change. The recent work that has examined behavioral change as a route to dissonance reduction has looked primarily at motivating prosocial behavior through highlighting personal hypocrisy (Aronson, Fried, & Stone, 1991; Stone et al., 1994; Stone & Fernandez, 2008). This work extends our knowledge of the ways in which dissonance can be resolved with behavioral changes, showing that there can be suboptimal behavioral responses to dissonance as well as prosocial ones.

In a similar vein, our research speaks to the stereotype threat literature (Steele & Aronson, 1995), particularly in terms of the dysfunctional consequences of expectancy disconfirmation in task performance contexts. The work on stereotype threat focuses on how individuals perform worse when an expectation that they will perform poorly as a function of their membership in a particular demographic group is made salient. Here, we focus on the dysfunctional consequences of expectancy disconfirmation when one's expectations are that it would be easy to perform well. We proposed and found that the need to perform consistently

with one's expectations for performance can drive rule breaking. Similar to the research on stereotype threat, meeting performance expectancies—whether high or low—seems an important driver of behavior. However, when legitimate routes to meeting those expectancies are not available, individuals appear willing to take illegitimate ones.

Limitations and Future Directions. While the current studies make an important addition to our understanding of the ways in which dissonance can be reduced, they are not without limitations. All three studies focused on rule breaking that did not involve the type of serious consequences people may experience in real world settings (e.g., when cheating on an exam in school). Future research examining whether our results hold in context where breaking rules had more serious consequences or could potentially damage one's reputation would provide further evidence for the powerful consequences of experiencing dissonance due to unmet expectations in task performance contexts. In addition, in our studies we assumed that people were interested in performing well on the tasks they worked on. As research has proposed that individuals find personal value in the specific domains that are strongly tied to their identity (Crocker & Wolfe, 2001), subsequent research could identify individual differences that may moderate the effectiveness of contravening the rules (such as cheating) in various domains.

A tacit assumption of this paper is that when task competence is salient, the need to demonstrate one's competence trumps the need to demonstrate one's morality, leading to breaking the rules to attain the level of performance one expected would be easy. In other words, the domain of one's self-concept that is dominant in the context is an important driver of how dissonance is resolved within it. Future research should investigate whether making the moral self-concept salient in a task performance context may moderate our effects.

It would be also interesting to explore whether rule breaking to reduce dissonance has downstream negative consequences for the individual. The literature on self-affirmation (see Cohen & Sherman, 2014, for a review) suggests that affirming one's self in the domain where you have recently been threatened may backfire. In the context of our study, people may be breaking the rules in order to affirm their ability to demonstrate competence. However, Cohen and Sherman (2014) suggest the process of affirming the self is only effective if the domain of the affirmation accesses more global understanding of the self beyond the threat. Since in our study both the potentially affirming behavior (rule breaking) and the threat (dissonance triggered by failing to meet expectations) are confined to the same domain, it is possible that resolving dissonance in this way will fail in terms of properly allowing for individuals to access, and repair, this more global understanding of their self. Future research could determine whether cheating in the same domain as the threat, as much academic cheating tends to be, leads to other unforeseen consequences, such as other dysfunctional behavioral responses (such as out-group derogation) or less adaptive psychological responses (such as rumination).

Conclusion. Before completing a task, we form expectations about its difficulty and of how well we will perform on it. It is psychologically uncomfortable to perform worse than we expected. In this paper, we argued and found that such dissonance promotes dysfunctional behaviors in the form of rule breaking, even when breaking rules means crossing ethical boundaries. Our results have important implications for the ways that we are setting students' expectations in academic settings, as well as broader implications for how we set expectations in professional environments. As it turns out, there are no "easy A's".

References

- Anderson, R. E. (1973). Consumer dissatisfaction: the effect of disconfirmed expectancy on perceived product performance. *Journal of Marketing Research*, 10, 38-44.
- Aronson, E. (1999). Dissonance, hypocrisy, and the self-concept. In E. Harmon-Jones & J. Mills (Eds.), *Cognitive dissonance: Progress on a pivotal theory in social psychology* (pp. 103-126). Washington, DC: American Psychological Association.
- Aronson, E., & Carlsmith, J. M. (1962). Performance expectancy as a determinant of actual performance. *The Journal of Abnormal and Social Psychology*, 65, 178-182.
- Aronson, E., Fried, C., & Stone, J. (1991). Overcoming denial and increasing the intention to use condoms through the induction of hypocrisy. *American Journal of Public Health*, 81, 1636-1638.
- Ayal, S., & Gino, F. (2011). Honest rationales for dishonest behavior. In M. Mikulincer & P. R. Shaver (Eds.), *The social psychology of morality: Exploring the causes of good and evil* (pp. 149-166). Washington, DC: American Psychological Association.
- Baird, J. S. (1980). Current trends in college cheating. *Psychology in the Schools*, 17, 515-522.
- Barkan, R., Ayal, S., Gino, F., & Ariely, D. (2012). The pot calling the kettle black: Distancing response to ethical dissonance. *Journal of Experimental Psychology: General*, 141, 757-773.
- Bartov, E., Givoly, D., & Hayn, C. (2002). The rewards to meeting or beating earnings expectations. *Journal of Accounting and Economics*, 33, 173-204.
- Brockner, J. (1979). The effects of self-esteem, success-failure, and self-consciousness on task performance. *Journal of Personality and Social Psychology*, 37, 1732-1741.

- Chance, Z., Norton, M. I., Gino, F., & Ariely, D. (2011). Temporal view of the costs and benefits of self-deception. *Proceedings of the National Academy of Sciences*, 108, (Supplement 3) 15655-15959.
- Cohen, G. L., & Sherman, D. K. (2014). The Psychology of change: Self-affirmation and social psychological intervention. *Annual Review of Psychology*, 65, 333-371.
- Cooper, J. (2007). *Cognitive dissonance: Fifty years of a classic theory*. Los Angeles: Sage.
- Crocker, J., & Wolfe, C. T. (2001). Contingencies of self-worth. *Psychological Review*, 108, 593-623.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.
- Dickerson, C. A., Thibodeau, R., Aronson, E., & Miller, D. (1992). Using Cognitive Dissonance to Encourage Water Conservation. *Journal of Applied Social Psychology*, 22, 841-854.
- Ditto, P. H., Pizarro, D. A., & Tannenbaum, D. (2009). Motivated moral reasoning. In D. M. Bartels, C. W. Bauman, L. J. Skitka & D. L. Medin (Eds.), *The Psychology of Learning and Motivation* (Vol. 50, pp. 307-338). Burlington: Academic Press.
- Epstein, S. (1973). The self-concept revisited: Or a theory of a theory. *American Psychologist*, 28, 404-416.
- Fazio, R. H., Zanna, M. P., & Cooper, J. (1977). Dissonance and self-perception: An integrative view of each theory's proper domain of application. *Journal of Experimental Social Psychology*, 13, 464-479.
- Festinger, L. (1957). *A theory of cognitive dissonance*. Evanston, IL: Row, Peterson.
- Festinger, L., & Freedman, J. (1964). Dissonance reduction and moral values. In S. Worchel & D. Byrne (Eds.), *Personality change* (pp. 220-247). New York: Wiley.

- Festinger, L., Riecken, H. W., & Schachter, S. (1956). *When prophecy fails*. Minneapolis, MN: University of Minnesota Press.
- Fointiat, V. (2004). "I know what I have to do but..." When hypocrisy leads to behavioral change. *Social Behavior & Personality: An International Journal*, 32, 741-746.
- Fried, C. B., & Aronson, E. (1995). Hypocrisy, misattribution, and dissonance reduction. *Personality and Social Psychology Bulletin*, 21, 925-933.
- Hackett, G. K., & Robbins, R. D. (2012, September 4). Cheating scandal erupts after short-answer questions added to Congress exams. *The Harvard Crimson*. Retrieved from: <http://www.thecrimson.com/article/2012/9/4/government-exam-harder-questions/>.
- Halperin, A. (2012, September 2). Accused student: Harvard "out for blood". *Salon*. Retrieved from: http://www.salon.com/2012/09/02/accused_student_harvard_out_for_blood/.
- Harris, J., & Bromiley, P. (2007). Incentives to cheat: The influence of executive compensation and firm performance on financial misrepresentation. *Organization Science*, 18, 350-367.
- Harter, S. (1978). Effectance motivation reconsidered: Toward a developmental model. *Human Development*, 21, 34-64.
- Harvard Magazine. (2013, February). Harvard College Reports on Cheating Inquiry. Retrieved from: <http://harvardmagazine.com/2013/02/harvard-college-disciplines-students-in-cheating-inquiry>.
- Hogan, C. E., Rezaee, Z., Riley, R. A., & Velury, U. K. (2008). Financial Statement Fraud: Insights from the Academic Literature. *Auditing: A Journal of Practice & Theory*, 27, 231-252.
- Jordan, A. H., & Monin, B. (2008). From sucker to saint: Moralization in response to self-threat. *Psychological Science*, 19, 809-815.

- Kantola, S. J., Syme, G. J., & Campbell, N. A. (1984). Cognitive dissonance and energy conservation. *Journal of Applied Psychology*, 69, 416-421.
- Kleiner, C., & Lord, M. (1999, November 14). The Cheating Game: 'Everyone's doing it,' from grade school to graduate school. *U.S. News and World Report*.
- Lee, S. W. S., & Schwarz, N. (2010). Washing away postdecisional dissonance. *Science*, 328, 709.
- Losch, M. E., & Cacioppo, J. T. (1990). Cognitive dissonance may enhance sympathetic tonus, but attitudes are changed to reduce negative affect rather than arousal. *Journal of Experimental Social Psychology*, 26, 289-304.
- Mazar, N., Amir, O., & Ariely, D. (2008). The dishonesty of honest people: A theory of self-concept maintenance. *Journal of Marketing Research*, 45, 633-644.
- McCabe, D. L., Butterfield, K. D., & Treviño, L. K. (2012). *Cheating in college: Why students do it and what educators can do about it*. Baltimore: Johns Hopkins University Press.
- Mills, J. (1958). Changes in moral attitudes following temptation. *Journal of Personality*, 26, 517-531.
- Mirman, D., McClelland, J. L., Holt, L. L., & Magnuson, J. S. (2008). Effects of Attention on the Strength of Lexical Influences on Speech Perception: Behavioral Experiments and Computational Mechanisms. *Cognitive Science*, 32, 398-417.
- Mishina, Y., Dykes, B. J., Block, E. S., & Pollock, T. G. (2010). Why "Good" Firms do Bad Things: The Effects of High Aspirations, High Expectations, and Prominence on the Incidence of Corporate Illegality. *Academy of Management Journal*, 53, 701-722.

- Norton, M. I., Monin, B., Cooper, J., & Hogg, M. A. (2003). Vicarious dissonance: Attitude change from the inconsistency of others. *Journal of Personality and Social Psychology*, 85, 47-62.
- Oliver, R. L. (1977). Effect of expectation and disconfirmation on postexposure product evaluations: An alternative interpretation. *Journal of Applied Psychology*, 62, 480-486.
- Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing Research*, 17, 460-469.
- Olson, J. C., & Dover, P. A. (1979). Disconfirmation of consumer expectations through product trial. *Journal of Applied Psychology*, 64, 179-189.
- Ordóñez, L. D., Schweitzer, M. E., Galinsky, A. D., & Bazerman, M. H. (2009). Goals gone wild: The systematic side effects of overprescribing goal setting. *Academy of Management Perspectives*, 23, 6-16.
- Pérez-Peña, R. (2013, September 16). Students Accused of Cheating Return Awkwardly to a Changed Harvard. *New York Times*. Retrieved from:
<http://www.nytimes.com/2013/09/17/education/students-accused-of-cheating-return-awkwardly-to-a-changed-harvard.html?smid=pl-share>.
- Pérez-Peña, R., & Bidgood, J. (2012, August 30). Harvard Says 125 Students May Have Cheated on a Final Exam. *New York Times*. Retrieved from:
<http://www.nytimes.com/2012/08/31/education/harvard-says-125-students-may-have-cheated-on-exam.html>.
- Pittman, T. S. (1975). Attribution of arousal as a mediator in dissonance reduction. *Journal of Experimental Social Psychology*, 11, 53-63.

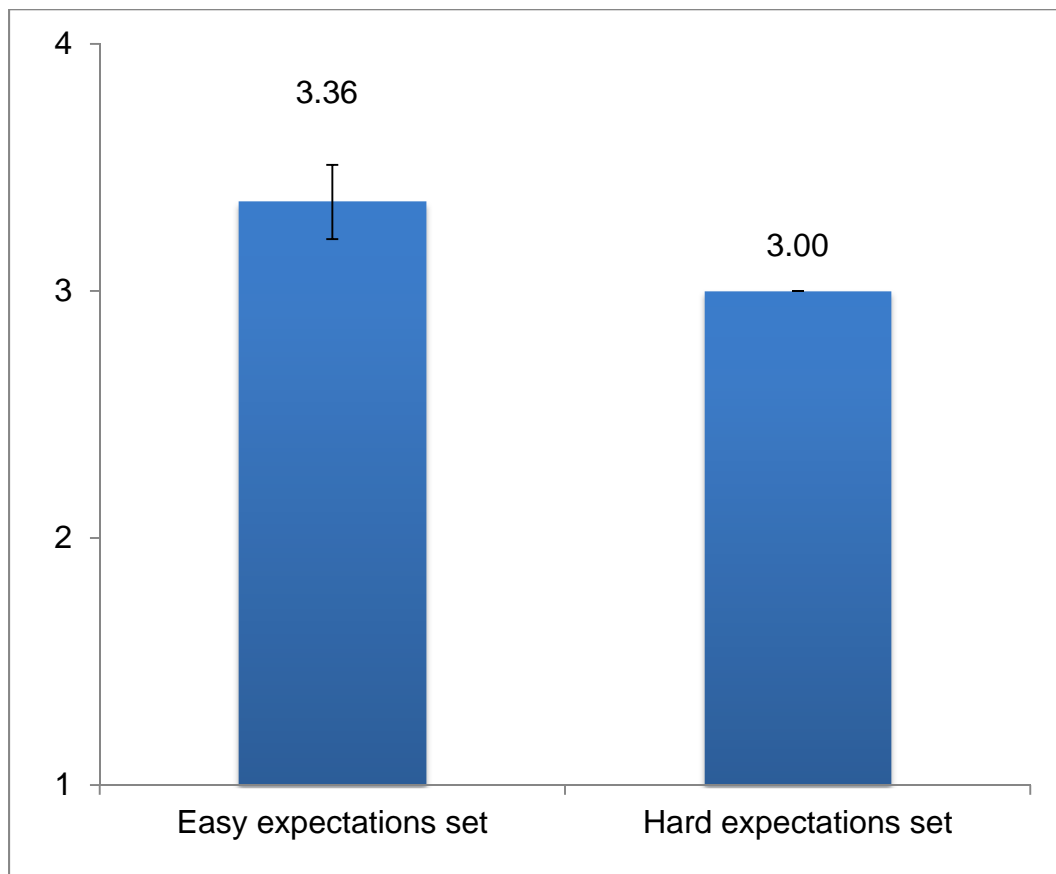
- Rholes, W. S., Bailey, S., & McMillan, L. (1982). Experiences that motivate moral development: The role of cognitive dissonance. *Journal of Experimental Social Psychology*, 18, 524-536.
- Rosenberg, S., Nelson, C., & Vivekananthan, P. (1968). A multidimensional approach to the structure of personality impressions. *Journal of personality and social psychology*, 9, 283.
- Schweitzer, M. E., Ordóñez, L., & Douma, B. (2004). Goal setting as a motivator of unethical behavior. *Academy of Management Journal*, 47, 422-432.
- Shalvi, S., Dana, J., Handgraaf, M. J. J., & De Dreu, C. K. W. (2011). Justified ethicality: Observing desired counterfactuals modifies ethical perceptions and behavior. *Organizational Behavior and Human Decision Processes*, 115, 181-190.
- Shalvi, S., Handgraaf, M. J. J., & De Dreu, C. K. W. (2011). Ethical Manoeuvring: Why People Avoid Both Major and Minor Lies. *British Journal of Management*, 22, S16-S27.
- Shu, L. L., Gino, F., & Bazerman, M. H. (2011). Ethical discrepancy: Changing our attitudes to resolve moral dissonance. In D. De Cremer & A. E. Tenbrunsel (Eds.), *Behavioral business ethics: Shaping an emerging field* (pp. 221-240). London: Taylor & Francis.
- Steele, C. M. (1988). The Psychology of Self-Affirmation: Sustaining the Integrity of the Self. In B. Leonard (Ed.), *Advances in Experimental Social Psychology* (Vol. Volume 21, pp. 261-302): Academic Press.
- Steele, C. M. (1999, August). Thin ice: 'Stereotype threat' and black college students. *The Atlantic Monthly*, 284, 44-54.
- Steele, C. M., & Aronson, J. (1995). Stereotype vulnerability and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology*, 69, 797-811.

- Stone, J., Aronson, E., Crain, A. L., Winslow, M. P., & Fried, C. B. (1994). Inducing Hypocrisy as a Means of Encouraging Young Adults to Use Condoms. *Personality and Social Psychology Bulletin*, 20, 116-128.
- Stone, J., & Fernandez, N. C. (2008). To Practice What We Preach: The Use of Hypocrisy and Cognitive Dissonance to Motivate Behavior Change. *Social and Personality Psychology Compass*, 2, 1024-1051.
- Stone, J., Wiegand, A. W., Cooper, J., & Aronson, E. (1997). When exemplification fails: Hypocrisy and the motive for self-integrity. *Journal of Personality and Social Psychology*, 72, 54-65.
- Vignoles, V. L., Regalia, C., Manzi, C., Golledge, J., & Scabini, E. (2006). Beyond self-esteem: Influence of multiple motives on identity construction. *Journal of Personality and Social Psychology*, 90, 308-333.
- Ward, W. D., & Sandvold, K. D. (1963). Performance expectancy as a determinant of actual performance: A partial replication. *The Journal of Abnormal and Social Psychology*, 67, 293-295.
- Waterman, A. S., & Ford, L. H. (1965). Performance expectancy as a determinant of actual performance: Dissonance reduction or differential recall? *Journal of Personality and Social Psychology*, 2, 464-467.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54, 1063-1070.

- Weary, G., Hill, M. G., & Jordan, J. S. (1984). Observers' Reactions to Attributors' Ascriptions of Causal Responsibility: Concordance of Causal Understanding. *Social Psychology Quarterly*, 47, 102-106.
- Weaver, D., & Brickman, P. (1974). Expectancy, feedback, and disconfirmation as independent factors in outcome satisfaction. *Journal of Personality and Social Psychology*, 30, 420-428.
- White, R. (1959). Motivation reconsidered: The concept of competence. *Psychological Review*, 66, 297-323.
- Zanna, M. P., & Cooper, J. (1974). Dissonance and the pill: An attribution approach to studying the arousal properties of dissonance. *Journal of Personality and Social Psychology*, 29, 703-709.
- Zegers, R. A. (1968). Expectancy and the effects of confirmation and disconfirmation. *Journal of Personality and Social Psychology*, 9, 67-71.

Figure 1.

Number of throws attempted, of three throws permitted ($\pm 1\text{SE}$), Study 1



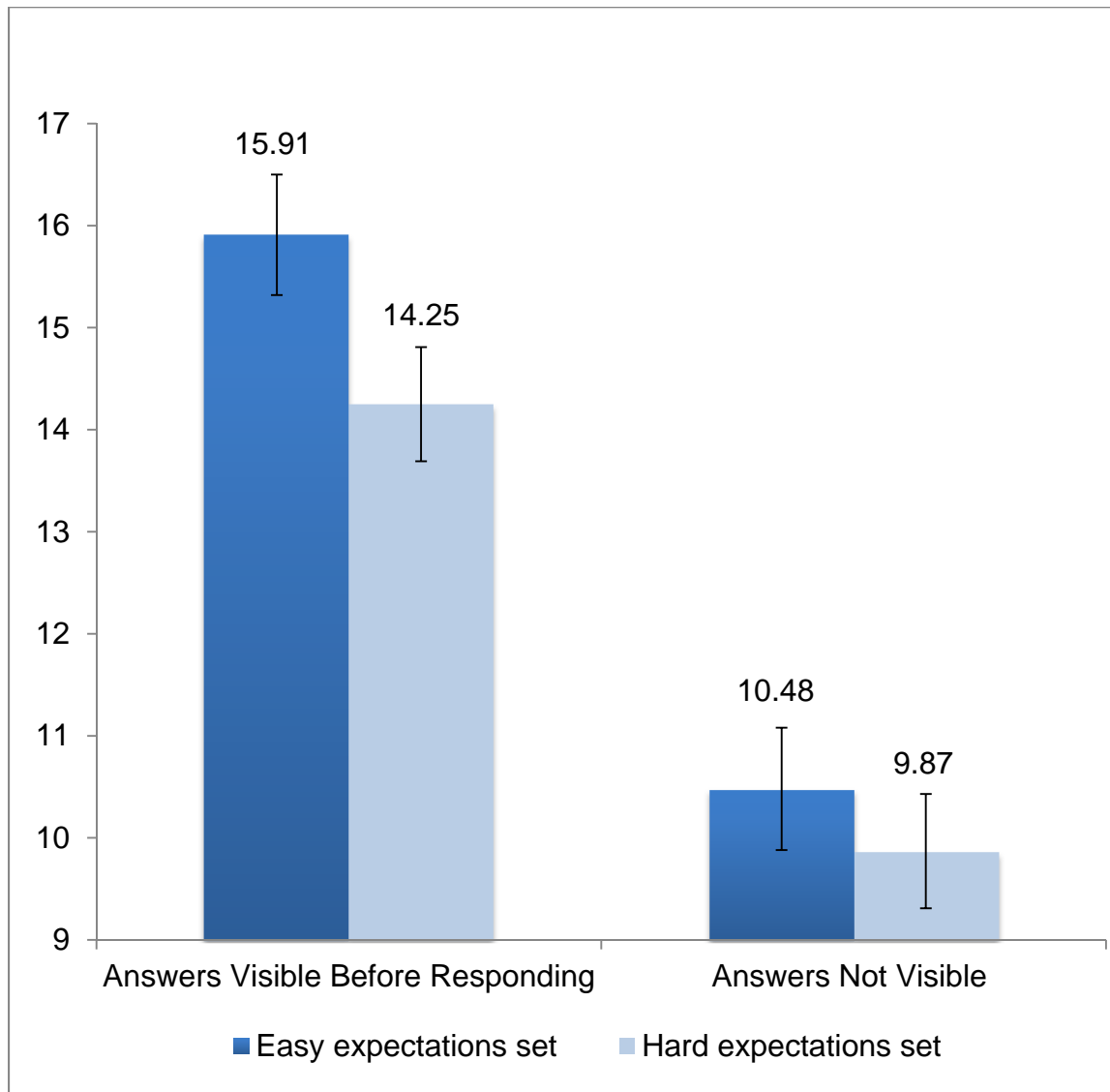
*Figure 2.*Number of correct answers, Round 2 ($\pm 1SE$), Study 2

Figure 3a.

Visual depiction of the rules accompanying experimental instructions, Study 3

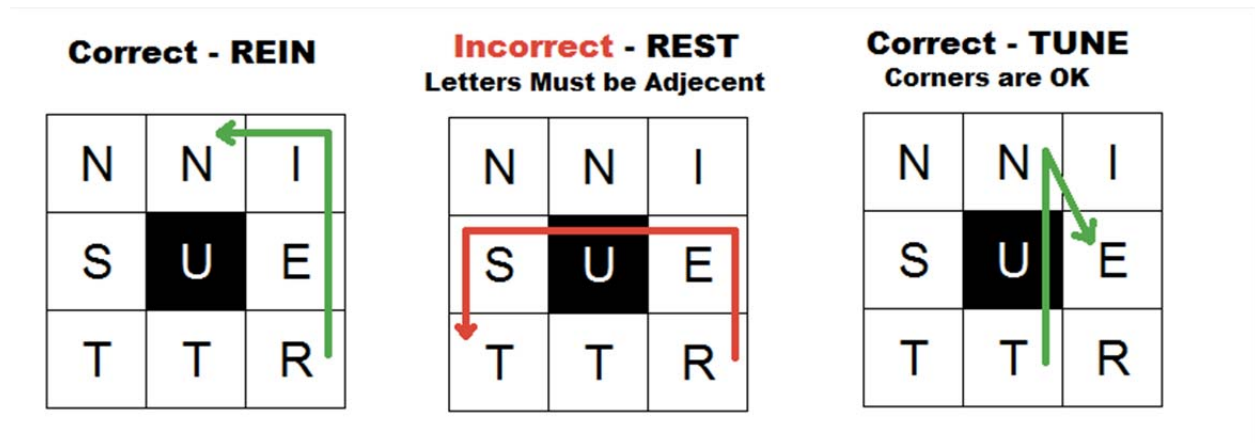


Figure 3b.

Nine-letter matrix used in Study 3, with a list of legitimate words that can be created from it

S	Y	S
B	L	M
T	I	O

1. **libs** - informal variant of liberation
2. **limo**
3. **limy** - containing or like lime
4. **milo** - a grain sorghum
5. **mils** - short of millions /millilitre
6. **milt** - the sperm-containing secretion of the testes of fishes
7. **moil** - drudgery or confusion
8. **mols** - variant of mole
9. **molt**
10. **moly** - herb given to Odysseus
11. **oils**
12. **oily**
13. **omit**
14. **slim**
15. **slit**

Figure 4.

Number of illegitimate words included in self-reported performance ($\pm 1SE$), Study 3

